

ABSTRACT OF THE DISCLOSURE

A system and method is provided for illuminating a subject using a light pipe that transmits light from a source, such as an LED ring illuminator to an outlet that directs the light appropriately as either bright field illumination, dark field illumination or both. The
5 light pipe can include concentric cylinders, typically with a bright field illuminator nested within a dark field illuminator. The tip of the dark field illuminator may be angled so as to internally reflect light inwardly toward the central optical axis of a camera at a low angle. The tip can be located near the focal plane of the camera for the desired field of view. The field of view of the camera sensor can be modified to reject data outside of a
10 illumination field of a particular shape. This illumination field can be created by shaping the light pipe in a predetermined form that projects the modified illumination field. Likewise, a set of aiming illuminators (in, for example, a noticeable color) can be provided around the perimeter of the light pipe to delineate outer boundaries of the illumination field or area of interest. These approaches facilitate better aiming of the sensor into
15 the desired area of interest so that it is illuminated and/or acquired most-fully.